

pH METER pH / CONDUCTIVITY METER

Models: HM-30G/50G/60G
Model: WM-50EG

These meters form part of the G-series family. They all feature GMP/GLP compliance and incorporate the world's first intelligent sensor.

FEATURES

- **Intelligent sensors with "calibration memo"**

These features are exclusive to the G-series family. The electrode itself stores 3 sets of calibration data in the sensor itself as well as the sensor information and serial number for identification. (HM-30G/50G/60G). Conductivity sensors store sensor type, serial number and cell constant which is automatically down-loaded to the meter on connection. (WM-50EG).

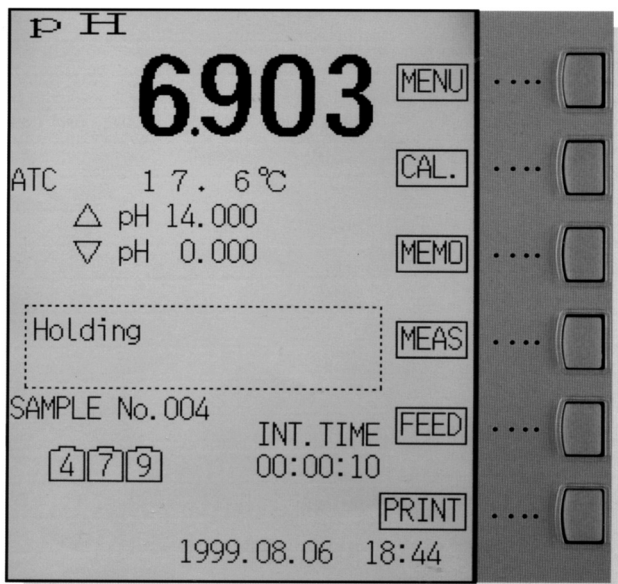
- **GMP/GLP Compliance**

The following advanced features are provided for routine maintenance (measurement management)

- Calibration data storage function (10 sets of data) Data/sensor type/serial no.. Calibration data (zero potential/sensitivity slope).
- Sensor replacement/alarm function. Diagnostic messages derived from calibration data are displayed, such as replacement or maintenance inspection.

- **Easy to use menu-driven operation with 6 mode keys**

Operation and Calibration can be carried out using 6 "soft" selection keys according to menus indicated on the display. Error messages and operation information are also displayed.



- **Large display with back-light**

The instrument features a large (320 x 240 pixel) LCD display with back-light. This provides excellent legibility and contributes to the ease of operation.

- **Easy electrode connection**

A simple multi-pin connector plug allows electrodes to be easily connected and disconnected.

- **Auto-calibration functions (up to 5 points)**

This provides enhanced accuracy across a wide range. Calibration is performed automatically with judgement of standard solution type and stability.



- **Graphical display**

Variation of measured value can be displayed as a graph (time vs pH/mV) on the LCD display.

- **Built in printer (HM-50G/60G)**

Hard-copy data output is available from the built in thermal printer.

- **Automatic stability determination**

Measurement stability is automatically determined and measurement result held. The stability reference data can be pre-set to cope with stability variations between different types of sample.

- **RS-232 output**

RS-232 data output is provided as a standard feature.

- **Data storage function**

Data from up to 100 previous measurements can be stored in the memory allowing access to previous measurement results.

- **ORP measurement**

ORP (mV) measurement available when the instrument is combined with ORP electrode.

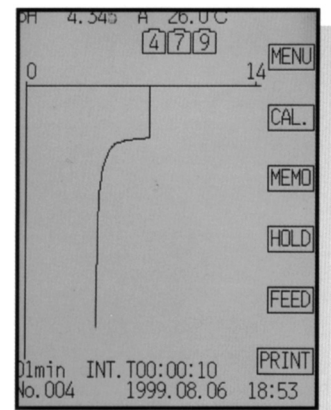
- **System expandability (HM-50G/60G)**

The instrument can be expanded by adding optional modules such as turn tables (12,18 or 36 samples) and electrode selector (max 5 channels).

- **Simultaneous display of pH and conductivity**

Each parameter indicated separately.

- **SI units (S/m) and conventional units (S/cm) are selectable**



SPECIFICATIONS

Model		HM-30G	HM-50G	HM-60G	WM50EG
Measuring method		Glass electrode method			Glass/platinum electrode method
Display		Digital pH/mV, temperature simultaneous display			pH/mV,cond.,temp.x2
Temperature compensation range		ATC (auto. temp. comp.): 0 to 100°C MTC(manual temp. comp.): 0 to 100°C			ATC: 0 to 100°C
Range	pH	Range	pH0 to 14.00		pH 0 to 14.00
		Resolution.	0.01pH	0.001pH/0.01pH	0.01pH
	mV	Range	0 to ± 2000mV	0 to± 2000 mV	0 to± 2000mV
		Resolution	1mV	0.1 mV	1mV
	Conductivity (For details, refer to the table of conductivity cell)	-	-	-	0-200μS/m to 200 S/m, 0-2Ω·m to 2 MΩ·m, 0-2 to 200%, 0 to 100°C
Temp.	Range	0 to 100°C			
	Resolution	0.1°C			
Repeat-ability	pH	±0.01pH±1 digit		± 0.001pH±1 digit	±0.01pH±1digit
	mV	± 1mV±1 digit		± 0.1mV±1 digit	± 1mV±1digit
	Conductivity	-	-	-	± 0.5%FS
	Temperature	± 0.1°C 1 digit			
Output	pH	700mV(pH0 to 14)			
	mV	±1V (0 to±2000mV)			
	Conductivity	-	-	0 to 1V per FS	
	Range	-	-	100mV/range	
	Temperature	0 to 1V(0 to 100°C)			
Calibration		Automatic, pH1, 4, 7, 9,(10),12 1 to 5 points other two kinds of standard solution 2 points			Automatic, pH 4, 7, 9 3 points
Printer		External printer(option)	Built-in		Built-in
RS-232C		built-in			
Power source		AC (by AC adapter)			
Power consumption		12VA	14VA	16VA	
Dimensions (approx.) except projection		182(w)x60(h)x257(d)mm	182(w)x60(h)x318(d)mm		
Weight		Approx. 0.9kg	Approx. 1kg		
Operating temp. range		0 to 40°C			

STANDARD ACCESSORIES

Model	HM-30G	HM-50G	HM-60G	WM50EG
pH electrode	GST-5721C 1 pc.			-
Standard solution	pH4.01, pH6.86, 500ml 1 ea.			-
KCl solution	3.3mol/L KCl solution, 50ml 1 pc.			-
Electrode holder	1 pc.			
Electrode stand	1 pc.			
Support rod	1 pc.			
Polyethylene beaker(150ml)	3 pcs.			
AC adapter/power cord	1 pc.			
Grounding wire	1 pc.			
Shield case	-		1 pc.	-
Printer chart paper	-	2 rolls		
Instruction manual	1 copy			
Electrode attachment piece	1 pc.			2 pcs.
Electrode stopper	1 pc.			
Chart case	-	1 pc.		

Consumables

pH standard solution, pH1.68, pH4.01, pH6.86, pH9.18, pH10.02, (500ml)
 3.3mol KCl solution, 500ml
 Printer chart paper (5 rolls/pack)
 Buffer powder pH4.01, pH6.86, pH9.18 (box of 5 bags, bag for 500ml solution)

pH/ORP ELECTRODES

Kind of electrode	Type	Application	pH range	Temp. range (°C)	Sample volume
pH (3-in-1 type)	GST-5721C	General use, standard	0-14	0 – 100	1ml
	GST-5721S	Organic solvent	0-14	0 – 100	3ml
	GST-5722S	Accurate measurement	0-14	0 – 60	2ml
	GST-5723S	Accurate trace volume	0-11	0 – 60	1ml
	GST-5724C	Spear type	0-12	0 – 60	0.5ml
	GST-5725C	Trace volume	0-13	0 – 100	0.5ml
	GST-5726S	Ultra-trace volume	0-13	0 – 60	0.3ml
	GST-5727C	Test tube	0-13	0 – 100	0.5ml
	GST-5728S	Ultra-trace, test tube	0-13	0 – 60	0.3ml
ORP(3-in-1 type)	GST-5720C	Flow-through type	0-12	0 – 60	0.25ml
	PST-5721C	General use, standard	–	0 – 100	1ml

CONDUCTIVITY CELL FOR WM-50EG

Type	Application	Range SI unit (conventional one)	Temp. range (°C)
CT-57101B	Dip type, standard	100 μ S/m to 10S/m (1 μ S/cm to 100mS/cm)	0 – 100
CT-57101C	Dip, low conductivity	5 μ S/m to 1S/m (0.05 μ S/cm to 10mS/cm)	0 – 100
CT-57101A	Dip, high conductivity	1mS/m to 100S/m (10 μ S/cm to 1mS/cm)	0 – 100
CT-87101B	Flow type, standard	100 μ S/m to 10S/m (1 μ S/cm to 100mS/cm)	0 – 100
CT-27111D	Flow, pure water	5 μ S/m to 2mS/m (0.05 μ S/cm to 20 μ S/cm)	0 – 80
CT-87101C	Flow, low conductivity	5 μ S/m to 1S/m (0.05 μ S/cm to 10 μ S/cm)	0 – 100
CT-87102A	Flow, high conductivity	10mS/m to 100S/m (100 μ S/cm to 1S/cm)	0 – 100
C-00205B	Flow, high conductivity	1mS/m to 10S/m (10 μ S/cm to 100mS/cm)	–

* FOR CT-27111D, PLEASE ORDER A SEPARATELY SOLD FLOW-CELL. PP TYPE (CEF-22A) AND SUS TYPE (CEF-23A) ARE AVAILABLE.

TABLE OF FUNCTIONS

Model	HM-30G	HM-50G	HM-60G	WM-50EG	
Measuring item	pH/mV, Temp.	pH/mV, Temp.	pH/mV, Temp.	pH/mV, temp., conductivity	
Digit expansion indication	–	–	○	–	
Temp. conversion function	○	○	○	○(EC)	
Output	pH/mV	○	○	○	
	Temp.	○	○	○	
	Output range setting	X	○	○	X
	Upper/lower limit	X	○	○	X
mV shift	○	○	○	○	
Clock function	○	○	○	○	
Data storage function(100 data)	○	○	○	○	
Hold function	○	○	○	○	
Standard table making function	○	○	○	X	
Printer	△	○	○	○	
Interval function	△	○	○	○	
Average value calculation	△	○	○	○	
RS-232C	○	○	○	○	
Auto calibrator	○	○	○	X	
Turn-table connection	X	○	○	○	
Electrode selector connection	X	○	○	○	
Dialog function	○	○	○	○	
External printer connection	○	○	○	○	

△ These functions available with external printer connected.

OPTIONS

- 1.Exclusive external printer (EPS-G): 60mm width compact recorder by normal paper
- 2.Turn-table: for continuous measurement of 12,18,36 or 60 samples (HM-50G/60G, WM-50EG)
- 3.Electrode selector (ES-1G): Connectable up to 5 pcs. of electrode (pH, ORP, Ion) (HM-50G/60G, WM-50EG)
Conductivity electrode selector (ES-1GC) for WM-50EG.
- 4.Automatic calibrator (AH-1G): Electrode can be calibrated every preset time (HM-30G/50G/60G).

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CAUTION

Do not operate products before consulting instruction manual.

<http://www.toadkk.co.jp>

Information and specifications are for a typical system and are subject to change without notice.